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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

Takashi FUTAGAWA ET AL.

SERIAL NO. 10/002,024

GROUP ART UNIT: 1772

FILED: November 15, 2001

EXAMINER: C.P. BRUENJES

FOR: LAMINATED FILM AND PACKAGING BAG

DECLARATION UNDER 37 C.F.R. 1.132HONORABLE COMMISSIONER OF PATENTS & TRADEMARKS  
WASHINGTON, D.C. 20231

SIR:

Now comes Takashi FUTAGAWA, a citizen of Japan, and a resident of c/o Shikoku Kakoh Co., Ltd., 1789, Minato, Shirotori-cho, Okawa-gun, Kagawa-ken, Japan, who declares and says that:

1. I graduated from Nagoya Institute of Technology in March, 1985.
2. I am currently employed by SHIKOKU KAKOH CO., LTD. since 1986.
3. I am familiar with the work related to U.S. Patent Application, Serial No. 10/002,024, and am a co-inventor of each and all of following Japanese Patent No. 3400904; and Japanese Patent Application Laid-open (KOKAI) No. 11-77937.
4. I have read the Office Action dated January 8, 2003, have understand the Examiner's rejection to the invention claimed in the above application, have studied Japanese

Patent Application KOKAI No. 11-77937 and have ascertained the following.

5. Under my control and supervision the following experiments were conducted:

Experiment 1 (Examples 1 of our invention)

A tubular body of a laminated film having a five-layer structure: Homo-PBT (layer thickness: 8 mm)/APO (layer thickness: 8  $\mu$ m)/NY: Nylon 6 (layer thickness: 16  $\mu$ m)/APO (layer thickness: 8  $\mu$ m)/L-LDPE (layer thickness: 40  $\mu$ m) was produced by a co-extrusion inflation and water-quenching method (downward water-cooling molding method) using a five-layer co-extrusion ring-shaped die, and wound up on a 3-inch paper tube. Upon the production of the above laminated film, polymethyl methacrylate (PMMA) fine particles having an average particle size of 6  $\mu$ m as an anti-blocking agent were added in an amount of 2,000 ppm to the PBT. The extrusion temperature was 240°C, the water-cooling temperature was 25°C, the amount of cooling water fed was 15 liters/minute and the winding-up speed was 15 m/minute.

The thus obtained tubular body was slit into a predetermined length, and the cut body was subjected to gusseting process, i.e., linearly heat-sealed along an edge thereof to obtain a gusseted bag.

Experiment 2 (Example 1 of KOKAI No. 11-77937)

A laminated film having a multi-layered structure: PBT layer (8  $\mu$ m)/an APO layer (6  $\mu$ m)/an NY (nylon 6) layer (16

$\mu\text{m}$ )/an APO layer (6  $\mu\text{m}$ )/an L-LDPE layer (44  $\mu\text{m}$ ) was formed into a tubular shape by a down-flow water-cooling molding method using a five-layer co-extrusion cylindrical die. In the production of the laminated film, polymethyl methacrylate (PMMA) particles having an average particle size of 6  $\mu\text{m}$  as an anti-blocking agent were added to the raw PBT resin in an amount of 2,000 ppm. The extrusion temperature was 240°C, the water-cooling temperature was 28°C and the take-up speed of film was 15 m/min.

There is no description of the amount of cooling water fed in KOKAI No. 11-77937. There has been found no document which is published prior to the filing date of KOKAI No. 11-77937, and which describes the amount of cooling water fed in the water-quenching method. Under the technological level of the water-quenching method in the co-extrusion molding method of the laminated film used in the present invention prior to the filing date of KOKAI No. 11-77937, the artisan of ordinary skill had conducted the water-quenching method under the condition of the amount of cooling water fed of not more than 10 liters/minute because of preventing the shaking of the laminated film in water. Therefore, the water-quenching method was conducted at an amount of cooling water fed of 10 liters/minute.

The thus obtained tubular body was slit into a predetermined length, and the cut body was subjected to gusseting process, i.e., linearly heat-sealed along an edge thereof to obtain a gusseted bag.

Experiments 3 and 4 (Comparative Example 4 and 5 of KOKAI No. 11-77937)

The same procedure as defined in Experiment 2 was conducted except that an anti-blocking agent was not charged to the outermost layer (Experiment 3) or that an anti-blocking agent used for the outermost layer was changed to silica ( $\text{SiO}_2$ ) fine particles (an average particle size: 6  $\mu\text{m}$ ; an amount: 2,000 ppm) (Experiment 4), thereby obtaining gusseted bags and then packaged ham products.

The results are shown in Table.

The properties in the particles were measured by the following methods.

(1) Measurement of shape factor of outermost layer:

A 100 mm-square sheet specimen (laminated film) was sampled from the above tubular body, and the shape factor thereof was measured using the measuring conditions and.

(2) Evaluation of curling property:

A 100 mm-square sheet specimen (laminated film) was sampled from the above tubular body, and allowed to stand in a chamber maintained at a temperature of 23°C and a humidity of 50% for 24 hours. Then, the curling property of the thus treated specimen was evaluated by the following method. That is, the specimen was placed on a horizontal table to examine the curling condition thereof. If the specimen was deformed

up to a cylindrical shape, the diameter (mm) of the cylindrical shape was measured. If the specimen is deformed merely into a curved shape, the height (mm) thereof was measured. At the same time, the gusseted bag was observed to determine whether or not any curl was caused at an open end thereof.

(3) Haze:

The haze was measured according to JIS K 7105.

Table 1

Examples and Comparative Examples	Layer structure	Cooling method	Cooling conditions	
			Cooling water temperature (°C)	Amount of cooling water fed (l/min.)
Experiment 1	Homo-PBT/APO/NY/APO/L-LDPE	Water-cooling	25	15
Experiment 2	Homo-PBT/APO/NY/APO/L-LDPE	Water-cooling	28	10
Experiment 3	Homo-PBT/APO/NY/APO/L-LDPE	Water-cooling	28	10
Experiment 4	Homo-PBT/APO/NY/APO/L-LDPE	Water-cooling	28	10

Table 1 (continued)

Examples and Comparative Examples	Cooling conditions	Shape factor (La/Lb)	Curling (direction)	
	Winding-up speed (m/min.)		Laminated film (mm)	Gusseted bag
Experiment 1	15	2.32	4	None
Experiment 2	15	2.14	20	None
Experiment 3	15	2.05	21	None
Experiment 4	15	2.08	18	None

REMARKS

As seen from the above, a shape factor of the laminated film of Experiments 2 to 4 (KOKAI No. 11-77937) is 2.14, 2.05 and 2.08, respectively, which are out of the range of the present invention.

Further, the curling property (the diameter (mm) of the cylindrical shape or the height (mm)) of the laminated film of Experiments 2 to 4 (KOKAI No. 11-77937) is 20, 21 and 18, respectively, which are out of the range of the present invention.

So, the laminated film of the present invention is different from that of KOKAI No. 11-77937.

Further, the laminated film of the present invention is superior in anti-curling property to that of KOKAI No. 11-77937.

6. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: April 28, 2003

Takashi Futagawa  
Takashi FUTAGAWA